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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,222	04/01/2004	Minoru Koyama	9319G-000757	7315
27572	7590	01/13/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			LAM, CATHY FONG FONG	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/816,222

Applicant(s)

MINORU KOYAMA ET AL

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,6-9 and 13-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 4,6-9 and 13-15 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

In view of the amendment and remarks filed on October 26, 2005, the pending claims continue to be unpatentable as following:

***Claim Rejections - 35 USC § 112***

1. Claims 4 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, there is lack of antecedent basis for "said liquid material" on line 5. It is unclear whether or not "fluid material" is equivalent to "liquid material". Applicant is required to be consistently throughout.

***Claim Rejections - 35 USC § 103***

1. Claims 4, 6-9 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraoka et al (US 6835889).

Hiraoka discloses a composite wiring substrate on its surface a passive element is formed.

The passive element can be a resistor element, a condenser element and a coil (or inductor) element, etc. (col 1 L 7-10). Conductive functional element such as electrodes or wiring may also be formed onto the substrate surface (col 7 L 27-28).

The composite wiring substrate is comprised of a porous base material and a polymeric material (col 6 L 16-21 & col 8 L 61-67). The porous base material can be made from a ceramic material such as silica or alumina, etc. (col 6 L 9-12). The porous base material can also be made from ceramic fibers (col 21 L 65-col 22 L 13).

The passive elements are formed by filling a conductive material into regions of the porous base material (col 3 L 10-12 & L 17-19). The conductive material can be a metal, semiconductive material (ie. highly doped silicon), conductive ceramics (ie. ITO), etc. dispersed into a resin binder (col 7 L 33-36 & col 10 L 24-32 & col 14 L 13-20). The conductive material functions as an electrode, a wiring or a high-permeability material (col 7 L 27-28 & col 8 L 32-42 & col 14 L 13-20). The conductive material is in a form of a fluid (or a printable paste) (col 7 L 43-45).

Hiraoka teaches the present invention but is silent about the non-affinity characteristic with respect to said liquid material. The examiner is taking the position that such limitation is inherent since Hiraoka clearly meets all the material limitations for the substrate and for the conductive material.

Hiraoka discloses the present invention but is silent about the circuit pattern includes an active element.

In view of the prior art teaching, it would have been obvious to include an desired component(s) and/or element(s) in an electronic circuit device because passive and active elements are well known to be coupled with printed wiring boards.

### ***Response to Arguments***

2. Applicant's arguments filed on October 26, 2005 have been fully considered but they are not persuasive. Hiraoka et al (US 6835889) teaches a composite material that is obvious over the present invention.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
Jan 06, 2006